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Enriching Life through Knowledge....

V01

VRPB ®

RECORD

V
R
P
B

PLAY

USER MANUAL
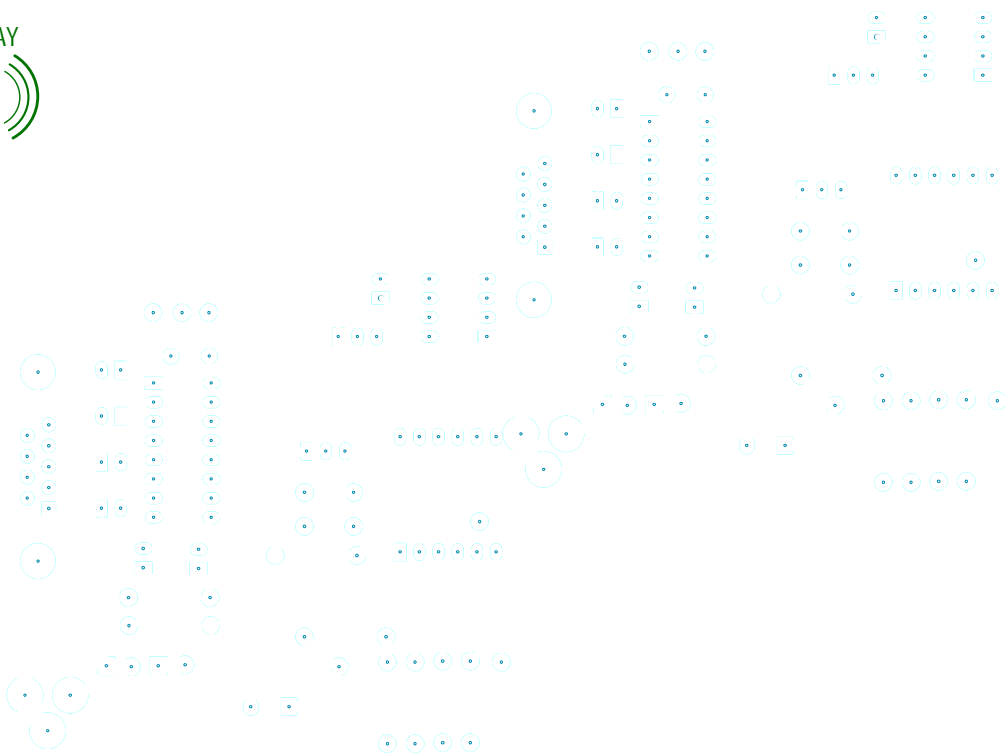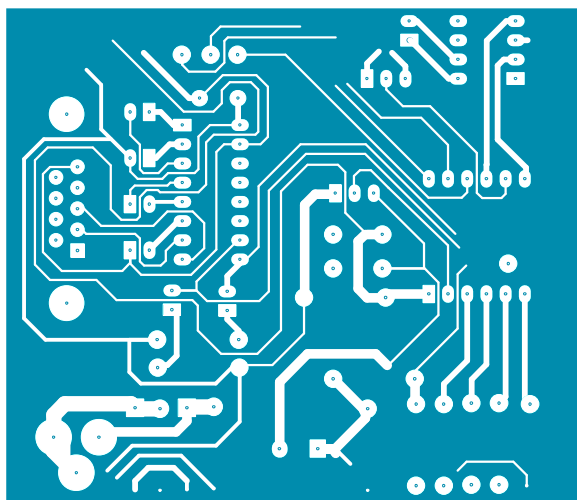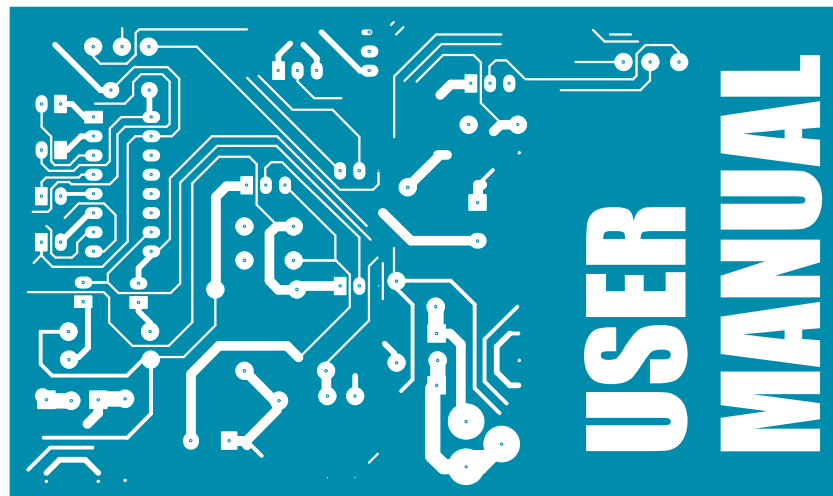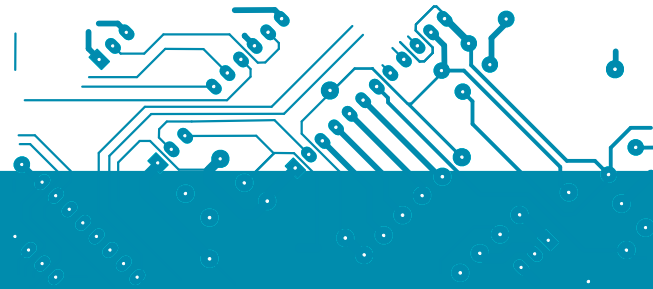
VRPB is 680 Second Audio Record & Palyback board, offers true solid stage capability and requires no software or microcontroller support to record or play back recorded sound

Voice Record & PlayBack System

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EleSof® V01 VRPB

Introduction

VRPB 680 seconds voice record & playback board design over APR33A3 IC, This **VRPB** board offer true solid state storage capability and requires no software or microcontroller support. The **VRPB** board specially designed for simple key trigger, user can record and playback the message averagely for 1, 2, 4 or 8 voice message(s) by switch.

Package contains:

Development system: VRPB Board.

CD: User Manual & supportive documents.

Specification

Power Supply	: 9V-12V AC/DC power supply through power jack or with screw head connector.
Power consumption	: 50mA in idle state (when on board module & port are inactive)
Dimension	: 3.9x2.25 inch
PCB	: Glass Epoxy with Green Masking

Key Features

Complete **VRPB** board is divided into 10 section, which are..
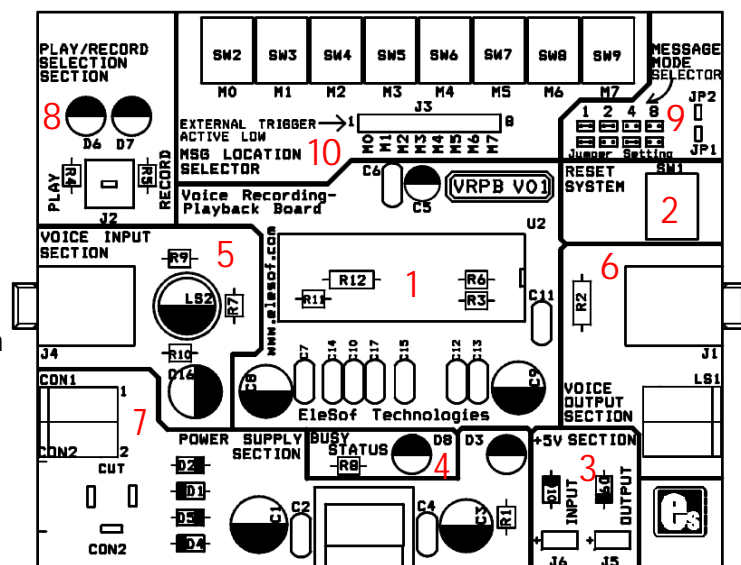
1. **Main Chip**
2. **Reset Switch**
3. **+5V Section**
4. **Busy Status LED**
5. **Voice Input Section**
6. **Voice Output Section**
7. **Power Supply Section**
8. **Play/Record Selection Section**
9. **Message Mode Selector Section**
10. **Message Location Selector Section**

VRPB SOUND RECODER PLAYBACK SYSTEM

Main Chip

The main chip use with *VRPB* board is APR33A3, features of APR33A3 mentioned below.

- External Reset pin.
- Resolution up to 16-bits
- No External ICs Required
- High Quality Line Receiver
- No Battery Backup Required
- Minimum External Components
- Very Low Standby Current: 1uA
- Low Power-Down Current: 15uA
- 680 sec. Voice Recording Length
- Powerful Power Management Unit

- Operating Voltage Range: 3V ~ 6.5V
- User Friendly, Easy to Use Operation
- Nonvolatile Flash Memory Technology
- Powerful 16-Bits Digital Audio Processor.
- Programming & Development Systems Not
- Differential-ended MIC pre-amp for Low Noise
- Supports Power-Down Mode for Power Saving
- High Quality Analog to Digital and PWM module
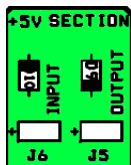- Averagely 1,2,4 or 8 voice messages record & playback

Reset Switch

VRPB board contain switch "**SW1**" whose function is to reset the complete system.
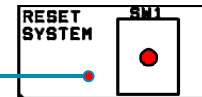
+5V Section

This section consists of two connectors "**J5**" & "**J6**" with two diodes. The main function of diode with two connectors is to protect *VPRB* board from wrong polarity supply connection.

- **J5 Connector :** This connector output +5V regulated supply for external use. ie +5V supply for Microcontroller board interface with *VRPB* board.
- **J6 Connector :** This connector is used to input +5V regulated supply to drive *VRPB* board.

Busy Status LED

VRPB board contain LED "**D8**" which show busy status of *VRPB* board during Recording/Playback

Voice Input Section

Voice input section having two options to record voice data in APR33A3 IC,
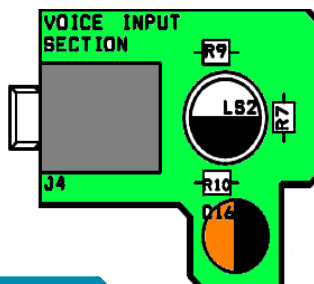
- **Condenser MIC :** Condenser MIC will work as default for input voice data & by speaking over it one can record voice message.
- **3.5mm Connector :** By connecting external voice source through 3.5mm female "**J4**" connector we can record voice message.

Note: Condenser MIC is set as default for voice message recording but when any external voice source is connected with 3.5mm female "**J4**" connector, MIC will become disable and on removing voice source from 3.5mm female "**J4**" connector Condenser MIC will set again as default for voice input.

Voice Output Section

Voice output section having two connectors for voice data out.
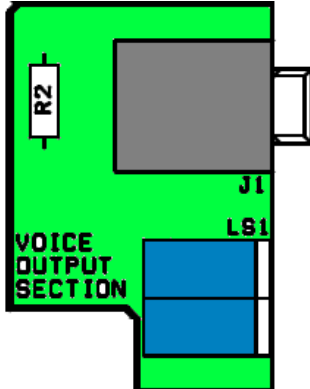
- **Screw Head Connector :** Through this Screw Head connector "**LS1**", an amplifier or small speaker can connect to play recorded voice message. **Note:** Speaker should be of 8 ohm.
- **3.5mm Connector :** Though this 3.5mm female "**J1**" connector, user can connect booster or home theater.

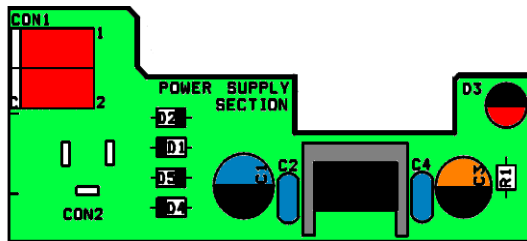**Note:** In this section Screw Head "**LS1**"connector is set as default for voice data output, on connecting any Audio playing device through 3.5mm female "**J1**" connector "**LS1**" connector will become disable.

Power Supply Section

The **VRPB** board has on-board +5V regulated power supply with Power jack "**Con2**", Screw head connector "**Con1**", Bridge rectifiers, 7805 regulator, Filter circuit & Power indicator LED "**D3**".

This board supports both DC & AC adaptor and if adapter is not available than user can use 9V to 12V 500mA transformer as power source.

Play/Record Selection Section

Play/Record selection consist of two LED's "**D6**" "**D7**" & one push switch "**J2**". Here the main role is of "**J2**" connector for selection of Play back recorded message or for recording new voice message.

- **J2 Pressed :** When "**J2**" switch is pressed LED "**D7**" will light up & **VRPB** system will enter in recording mode.

- **J2 Released :** When "**J2**" switch is released LED "**D6**" will light up & **VRPB** system will enter in playing mode.

VRPB SOUND RECODER PLAYBACK SYSTEM

Message Mode Selector Section

VRPB system support fixed 1/ 2/ 4/ 8 message mode; user can divide the memory averagely for 1, 2, 4 or 8 messages by the help of jumper "**JP1**" & "**JP2**".

- **1-Message Mode :** Complete chip memory will be use for signle message when both jumpers "**JP1**" & "**JP2**" are close after chip reset.

- **2-Message Mode :** The memory will be divided to 2 messages averagely when jumper "**JP1**" is open & "**JP2**" is close after chip reset.

- **4-Message Mode :** The memory will be divided to 4 messages averagely when jumper "**JP1**" is close & "**JP2**" is open after chip reset.

- **8-Message Mode :** The memory will be divided to 8 messages averagely when both jumpers "**JP1**" & "**JP2**" are open after chip reset.

Note: The message should be recorded and played in same message mode; we CAN NOT guarantee the message is complete after message mode changed. For example, user recorded 8 messages in the 8-message mode; those messages can be played in 8-message mode only. If user changed to 1, 2 or 4 message mode, system will discard those messages.

Message Location Selector Section
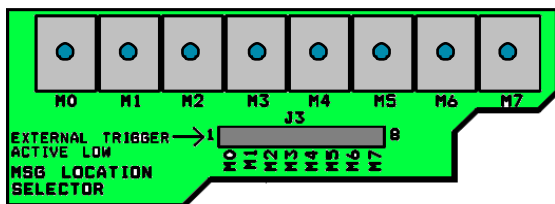
Message location selector consists of "**M0**" to "**M7**" switches for Recording/Playback message segments depend upon selected message mode. With these switches, eight pin male berg strips connector "**J3**" is present to trigger message from external device or can say to interface *VRPB* system with other circuits & boards.

- **When 1-Message Mode Selected :** When message mode 1 is selected than only "**M0**" switch & "**M0**" pin of "**J3**" connector will work.

- **When 2-Message Mode Selected :** When message mode 2 is selected than only "**M0-M1**" switches & "**M0-M1**" pins of "**J3**" connector will work.

- **When 4-Message Mode Selected :** When message mode 4 is selected than only "**M0-M3**" switches & "**M0-M3**" pins of "**J3**" connector will work.

- **When 8-Message Mode Selected :** When message mode 8 is selected than only "**M0-M7**" switches & "**M0-M7**" pins of "**J3**" connector will work.

Getting Started

▪ Connect Speaker with "**LS1**" connector or any amplifier system though 3.5mm female "**J1**" connector.

▪ Select Message mode 1/2/4/8 through jumper "**JP1**" & "**JP2**".

▪ Press "**J2**" connector to set *VRPB* system in recording mode, "**D7**" LED will light up.

▪ Power ON *VRPB* system.

▪ Let us assume message mode 8 was selected above. This will give us 8 messages of approximately 85 seconds each message.

▪ Now when any switch (**M0**, **M1**, **M2** … **M7**) pressed in record mode, the *VRPB* system will first playback "beep" tone and message recording started. Message recording will continue until pressed message switch not released or message memory not full, as recording finish *VRPB* system will playback "beep" tone 2 times to indicate the message record finished.

**Note: If the message already exists and user record again, the old one's message will be replaced.**

▪ Now for playing recorded message keep message mode (1/2/4/8) same which is set at the time of recording.

▪ Release "**J2**" connector to set *VRPB* system in play mode, "**D6**" LED will light up.

▪ Now press any switch (**M0**, **M1**, **M2** … **M7**) to play recorded message over particular location, and message will playback until the user pressed the tact-switch again or message got finish.

Note: If message play is interrupted by pressing any switch (M0**, **M1**, **M2** … **M7**) or by external trigger (0 low) on pins of "J3" connector, current message will stop and new message will start to play.**

▪ During message play/recording "**D8**" LED will light up, which indicate busy status of *VRPB* system.

Interface External Trigger to Microcontroller

Below schematic is showing how to interface External Trigger Points with Microcontroller.
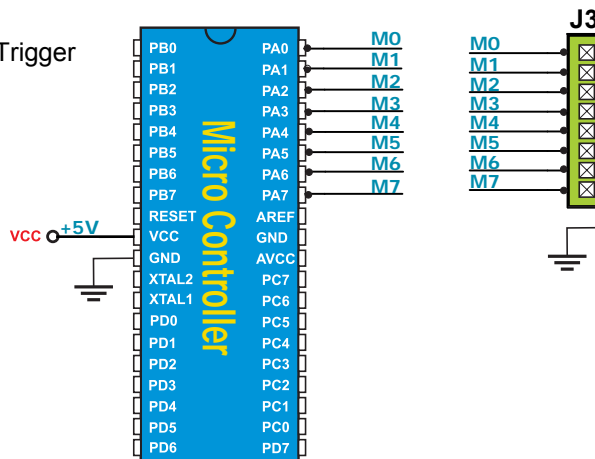
Note: GND of *VRPB* system & Microcontroller board should be common.

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Development System

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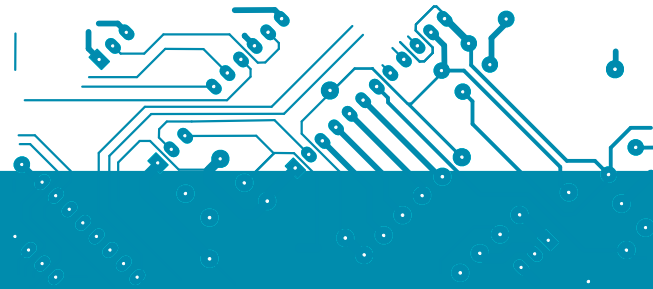
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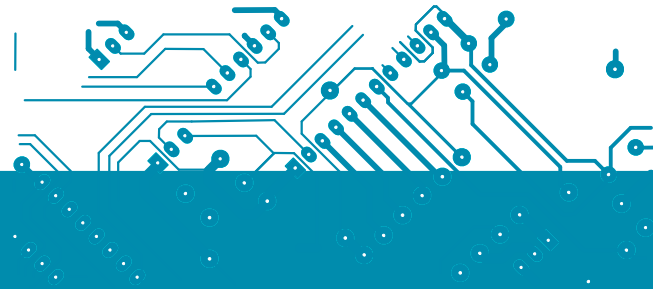
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